A New Milliped of the Genus *Tynomma* from California

(Lysiopetalidea: Lysiopetalidae)

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The genus *Tynomma* contains the only representatives of the crested millipeds in Northern California. The two species recognized by Buckett and Gardner (1969) are found abundantly in a variety of habitats. *Tynomma mutans* (Chamberlin) occurs around San Francisco Bay, and the larger *Tynomma magnum* Buckett and Gardner occurs further south along the Monterey Coast. A third species has now been distinguished in a collection of millipeds sent to me for determination by Dr. Evert I. Schlinger for the California Insect Survey, University of California, Berkeley. A key is presented below to separate these species.

KEY TO THE SPECIES OF TYNOMMA LOOMIS

1. Transition to full number of crests occurring on segments 11 or 12; body small (14–22 mm); lacking coxal lamina on mid-body legs of male .... *mutans* (Chamberlin)
   Transition to full number of crests occurring on segments 14 or 15; body large (30–40 mm); with distinct flattened process on alternate coxae of mid-body legs in male 2
2. Transition to full crest number occurring on segment 14; gonopod with solenomerite curving cephalad, prongs equal .... *magnum* Buckett and Gardner
   Transition to full-crest number occurring on segment 15; gonopod with solenomerite produced laterad, proximal prong much reduced .... *schlingeri* Gardner, new species

Tynomma schlingeri Gardner, new species

DIAGNOSIS.—Differing from *magnum* and *mutans* in changing to full crest number on segment 15 rather than 14 or 12, and in the details of the gonopods (figs. 1 and 2).

HOLOTYPE MALE.—Head dark brown, mottled dorsally, light brown frontally, gnathochilarium depigmented; antennae brown; tergites medium brown, with whitish middorsal stripe, and pale brown below third crest on each side; legs pale brown. Head with surface lightly rugose; coronal suture short, not extending below vertex; frontal area wide, sunken mesally; clypeus smooth, with 12 stout setae ventrally; antennae long, with article three longest, followed in length by articles two, five, four, six, one and seven; all antennal articles clothed in short setae; four terminal sense cones in apex of seventh antennal article; eye with 37 ocelli in rows of 9, 8, 7, 6, 4, 3 and 1 ocelli, respectively. Body segments 61; collum narrower than head, with 20 crests; segments 2 through 13 with five primary crests, including two suprarepugnatorial crests; segments 15 and succeeding with six pri-

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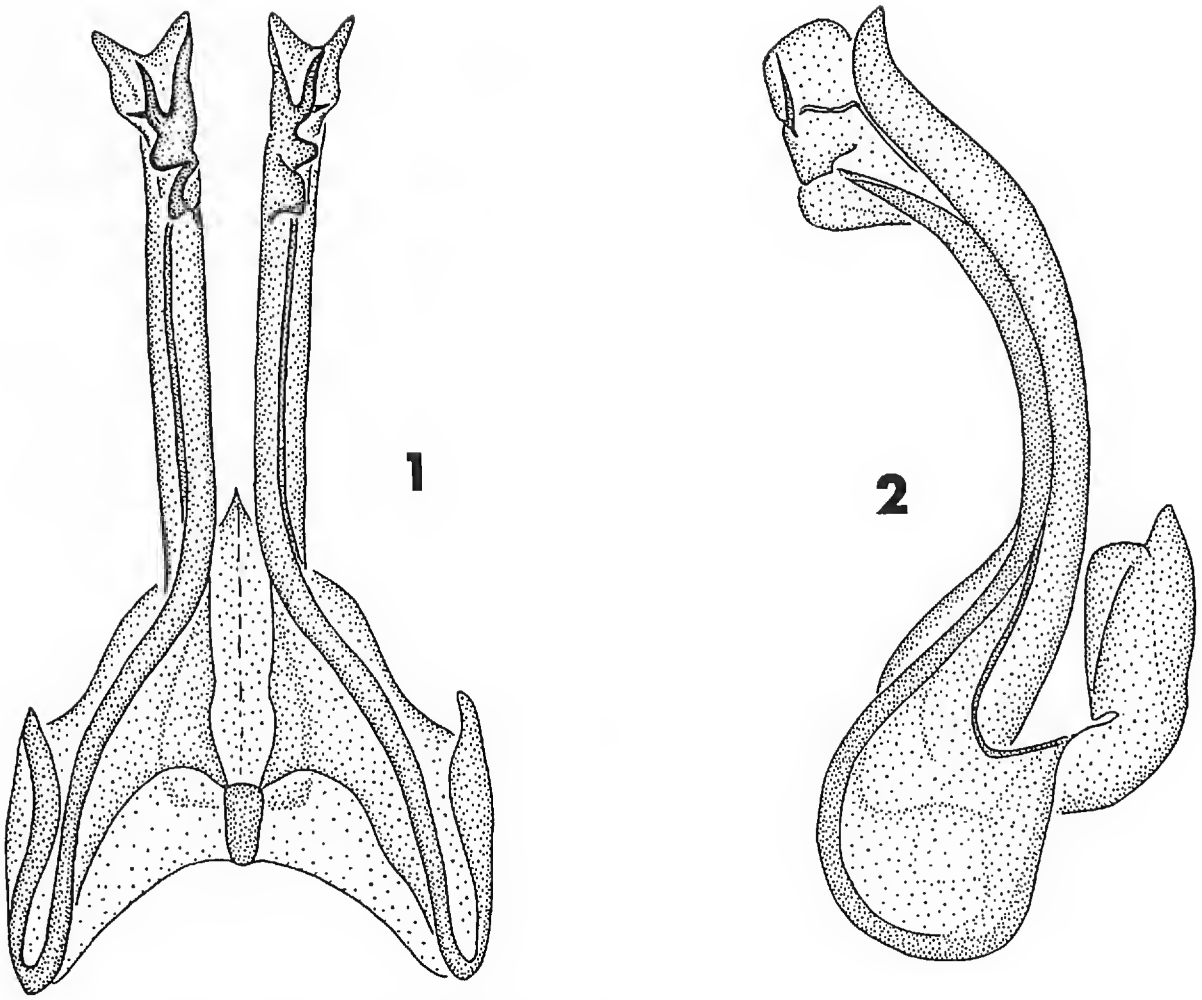

Figs. 1–2. *Tynomma schlingeri,* holotype male. Fig. 1. Gonopods, posterior aspect. Fig. 2. Left gonopod, lateral aspect.

mary crests, including three suprarepugnatorial crests. Setae of primary dorsal crests equalling one-half length of crest on anterior segments and one-third crest length on middle body segments; setae moving to caudal end of crest on sixth segment, projecting mesocaudad on that and succeeding segments, not enlarged caudally; secondary crests large, subequal to primary crests on anterior segments, becoming gradually reduced caudad, nearly obsolete on posterior third of body, two secondary crests between two dorsal primary crests, one between others. Body tapering gradually caudad; epiproct with lateral margins straight, exceeding anal valves, with one pair of paramedial dorsal setae and two pairs of lateral marginal setae; spinnerets prominent, produced caudad just below caudal margin or epiproct; a pair of setae subtending spinnerets; anal valves smooth, with one pair of setae removed from anal lips; anal lips narrow, slightly protruding; hypoproct lenticular, with two pairs of setae. Legs seven segmented, with transverse sutures on tarsi of mid-body legs; podites from longest to shortest as follows: 7, 3, 4, 6, 5, 1, 2; legs one and two six-segmented, reduced; about half length of normal walking legs, with large, erect setae on mesal surface of podites; tarsi with dense comb mesally; second coxa with small, acute anterior process and large cylindrical posterior gland; third and succeeding legs with velutinous pad on mesal face of tarsus; legs 3 through 24 with eversible coxal glands distally; beginning with leg 16, alternate legs with coxa produced in subconical caudal process; beginning with leg 48, and continuing to leg 80, those legs with caudal process also with rounded, sclerotized anterior lamina; succeeding legs normal. Gonopods anteriorly fused, forming a single subtriangular ventral lamina with sinuous lateral margins, acute apex, and median vertical carina; posteriorly, produced separately in long, subcylindrical, narrow pieces greatly exceeding anterior lamina; distally expanded, with rounded subapical posterior lamina, wide mesal lamina with small, crcscent-shaped solenomerite, and rounded anterolateral lamina. Length: 30 mm.

PARATYPE FEMALE.—As in male except for sexual characters.

SPECIMENS EXAMINED. Holotype male.—CALIFORNIA: STANISLAUS COUNTY: DEL PUERTO CANYON, el. 1200 ft., FRANK RAINES PARK, 13 April 1973 (E. I. Schlinger). Paratypes. 4 females, same data as holotype. All types will be placed in the type collection of the California Academy of Sciences, San Francisco.

DISCUSSION.—This distinctive species is closely related to *magnum* as indicated by several features. Both are large, have a short anterior gonopod and long posterior gonopod, rounded laminae on alternate coxae, sutures on tarsi, and transition to full crest number occurring on adjacent segments.

The type locality for *schlingeri* is an isolated canyon in the inner coast ranges. In addition to the present species, an undescribed species of *Caseya* (fam. Caseyidae) occurs there. Neither species has been collected elsewhere.

LITERATURE CITED

BUCKETT, J. S., AND M. R. GARDNER. 1969. Revision of the chordeumid milliped genus *Tynomma* Loomis from California. Pan-Pac. Entomol., 45: 204–216.